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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,004	03/31/2006	Hiroaki Minamide	8075-1017	1275
466 7590 06/15/2007 YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			EXAMINER BAKER, DAVID S	
			ART UNIT 2884	PAPER NUMBER
			MAIL DATE 06/15/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/553,004

Applicant(s)

MINAMIDE ET AL.

Examiner

David S. Baker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/11/05
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 13-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term "high" in claims 13 and 15 is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention. Claims 14 and 16-18 are additionally indefinite due to their dependence upon and lack of clarification to an indefinite claim.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Minami (US 4,874,808 A).

Regarding claim 13, Minami discloses an optical component comprising a high polymer of cycloolefin (C:16 L:62 thru C:17 L:47). A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the

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intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. As such, the recitation of “for a terahertz wave transmission optical system” has not been given any patentable weight because the phrase is merely an intended use; no terahertz optical system limitations are present in the claim. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Regarding claim 14, Minami discloses that the cycloolefin optical component may be any of a lens, a prism, a beam supplier, a beam splitter, a fiber, a waveguide, a mirror, a polarizer, or a window (C:16 L:62 thru C:17 L:47).

3. Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Usami (JP 2002-303574 A).

Regarding claim 19, Usami discloses a terahertz band wave processing apparatus comprising: a terahertz band wave generator for generating predetermined terahertz waves (F:1-4, P:0004-0013, P:0028-0053, P:0077-0090); a terahertz wave detector for detecting the terahertz waves (F:1-4, P:0004-0013, P:0028-0053, P:0077-0090); a first light transmission regulator for defining a light transmission path between the terahertz wave generator and the terahertz wave detector and regulating the optical axis (F:1-4, P:0004-0013, P:0028-0053, P:0077-0090); a light semi-transmissive plate for transmitting terahertz waves on the optical axis between the first light transmission regulator and the terahertz wave detector and reflecting light incident at a predetermined incident angle (F:1-4, P:0004-0013, P:0028-0053, P:0077-0090); and a second light

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transmission regulator set on the optical axis between the light semi-transmissive plate and the terahertz wave detector, characterized in that predetermined visible light enters the light semi-transmissive plate as pilot light and is reflected by said light semi-transmissive plate and the optical axis of said reflected visible light is superimposed on the optical axis of the terahertz waves and the optical axis of said terahertz waves can be visually recognized in a simulated manner by the visible light (F:1-4, P:0004-0013, P:0028-0053, P:0077-0090).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami (JP 2002-303574 A) in view of Minami (US 4,874,808 A).

Regarding claim 15, Usami discloses a terahertz wave generator with optical components arranged along the optical axis (F:1-4, P:0004-0013, P:0028-0053, P:0077-0090). Usami does not disclose expressly that any of these optical components are cycloolefin components. Minami discloses cycloolefin components for use in optical systems (C:16 L:62 thru C:17 L:47). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a cycloolefin optical component in a terahertz wave optical system. The motivation for doing so would have been that cycloolefin optical components have desirable dielectric properties with a low absorption and a low index of refraction.

Regarding claim 16, Usami discloses that the terahertz optical system comprises a visible light source disposed and visible light from the visible light source are superimposed on the optical axis of the terahertz waves (F:1-4, P:0004-0013, P:0028-0053, P:0077-0090).

7. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami (JP 2002-303574 A), Minami (US 4,874,808 A), and further in view of Nuss (US 5,789,750 A).

Regarding claims 17-18, Usami and Minami disclose the claimed invention but do not disclose expressly that the frequency band of the terahertz waves is between 100GHz – 10 THz. Nuss discloses a terahertz spectrometer that operates between 100GHz – 20THz. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the range of terahertz waves of Nuss as the range for Usami and Minami. The motivation for doing so would have been to improve imaging diversity by providing for a wider range of frequencies to scan with.

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***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

*THz transmission characteristics of dielectric-filled parallel-plate waveguides* – Mendis discloses that cycloolefin optical components may be useful in terahertz radiation fields.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Baker whose telephone number is (571) 272-6003. The examiner can normally be reached on MTWRF 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSB

  
CONSTANTINE HANNAHER  
PRIMARY EXAMINER